(No Model.)

F. L. McNAB.

CAR COUPLING.

No. 385,868. Patented July 10, 1888.

Fig. 1.

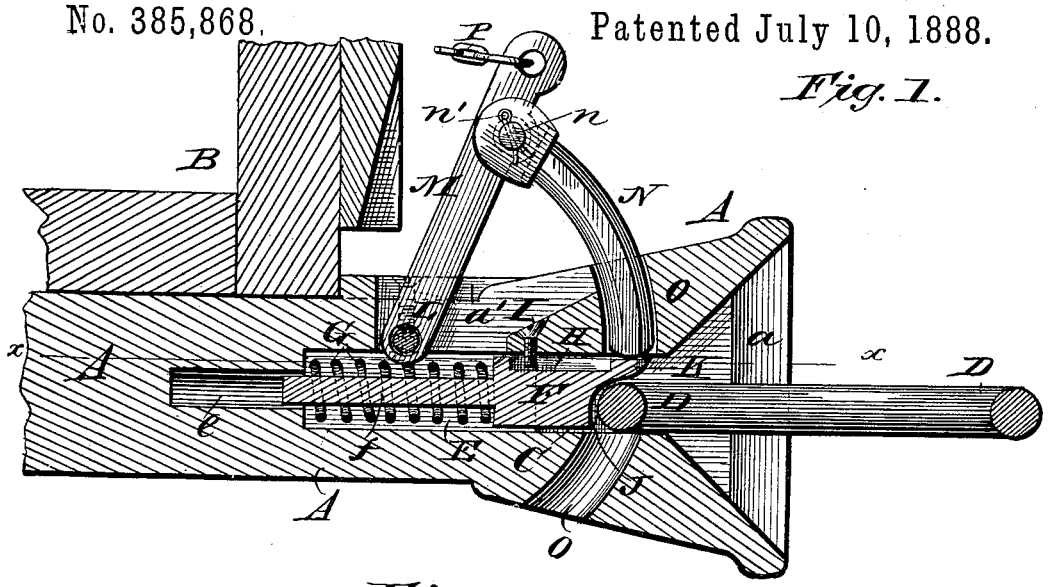

Fig. 2.

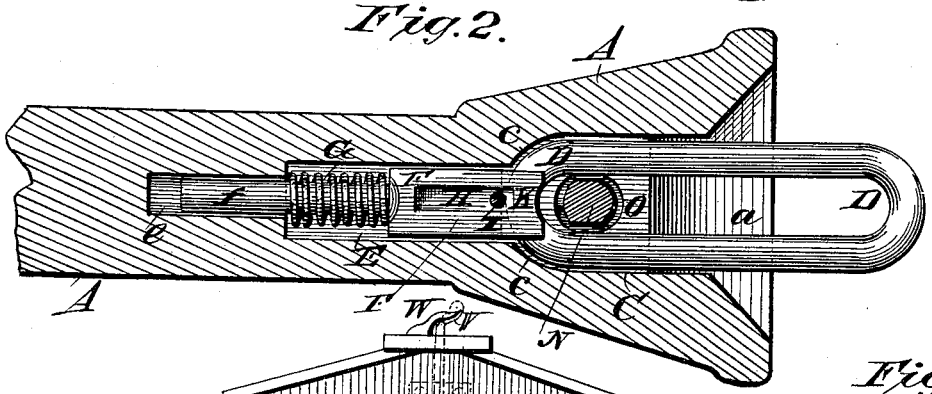

Fig. 3.

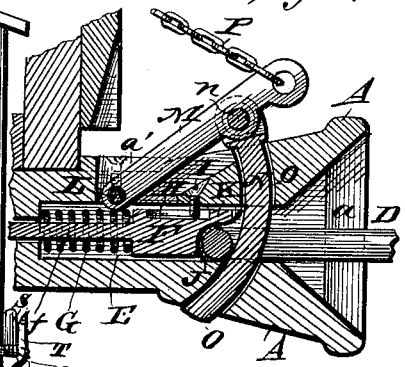

Fig. 4.

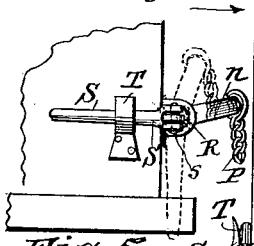

Fig. 5

WITNESSES:

Phil. C. Dieterich.

C. Sedgwick.

INVENTOR:

F. L. McNab.

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANCIS L. McNAB, OF STURGEON BAY, ONTARIO, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 385,868, dated July 10, 1888.

Application filed January 26, 1888. Serial No. 261,934. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS L. McNAB, of Sturgeon Bay, Province of Ontario, Dominion of Canada, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to car-couplings, and has for its object to provide a simple, inexpensive, and efficient coupling of this character by which cars may be coupled and uncoupled without requiring train-men to go between them and expose themselves to injury.

The invention consists in certain novel features of construction of the car-coupling, all as hereinafter described and claimed.

Reference is to be had to the accompaying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a central longitudinal sectional elevation of my improved car-coupling with the draw-bar partly broken away, and shows, also, a part of a car-body to which the coupling is attached. Fig. 2 is a plan view of the coupling in horizontal section on the line *x x* in Fig. 1. Fig. 3 is a detail longitudinal sectional view showing the positions of the parts of the coupling when the link is coupled to it. Fig. 4 is an end elevation of a box-car with my coupling applied thereto; and Fig. 5 is a detail view of the operating crank-shaft, arm S, and support T.

The draw-head A of the coupling may be held to a car-body, B, in any approved way and with buffer-springs of any kind not necessary to show or describe, as my invention has reference more particularly to the construction of the forward end of the draw-head and its coupling pin and link connections, as hereinafter explained.

The draw-head has the usual tapering mouth, *a*, opening into a socket, C, adapted to receive a coupling-link, D, which can enter the draw-head until it strikes a shoulder, *c*, at the back end of the link-socket. Behind the link-socket C the draw-head is provided with a longitudinally-ranging recess or pocket, E, prolonged inward by a bore, *e*, said recess and bore receiving a trip-block, F, the front portion of which fits the recess E loosely, while its back part or stem *f* enters the bore *e*, which guides it. On the stem *f* is placed a spiral spring, G, which normally expands between the back end wall of the recess E and a shoulder on the block F to force the block forward until a shoulder at the back end of a groove, H, in the top of the block strikes a screw or pin, I, which is set into the top of the draw-head and enters the groove. Contact of the coupling-link with the draw-head shoulder *c* prevents damage to the trip-block spring G and the stop screw or pin I. The forward end of the trip-block is rabbeted out transversely at its lower part to provide a recess, J, to receive the inner end of the coupling-link, which thus rests beneath a tongue or lip, K, of the block above the recess J, and whereby the link will be held up at its outer end prior to coupling to another car. The lip K also serves as a support to the curved coupling-pin, as presently explained.

In a recess or slot, *a'*, in the top of the draw-head A is pivoted on a transverse pin, L, a drop bar or lever, M, to the outer end portion of which is pivotally connected by a headed bolt, *n*, and a cotter or split pin, *n'*, a coupling-pin, N, which is curved on a segment or arc of a circle struck from the pin L as a center, and this pin N is adapted to fall into a correspondingly-curved vertically-ranging slot, O, made in the draw-head A a little in rear of its throat *a*. The outer end of the coupling-pin lever M is connected by a chain or cord, P, with the central cranked part, *r*, of a shaft, R, which shaft is journaled in suitable bearings, *r' r'*, on the car-body B, and is provided at its outer ends with crank-arms S, which are hinged at *s* to the ends of the shaft, so that when the shaft is turned to lower the coupling-pin to couple two cars the arms S may be conveniently placed in or on latch-hook devices or supports T, fixed to the car-body, and so that the arms may also be quickly and easily lifted or disengaged from the latches or supports T to allow said arms to swing down as the shaft R turns and lifts the coupling-pin N to uncouple two cars, the weight of the pendent arms S then being sufficient to hold the coupling-pin up to prevent coupling of cars while shunting them onto side tracks or about the yard. The coupling-pin N is flattened a little at the sides, and the hole O is correspondingly formed to cause the pin to work truly in the hole. The shaft R may be

provided with a lever, S, having a latch, T, at one side only of the car, should this construction be preferred.

The operation is as follows: When the coupling-pin N is raised, the block F will be forced forward by the spring G to carry the front lip, K, of the block below the pin to support it, as shown in Fig. 1 of the drawings. When the link D of an opposing car enters the draw-head A, it strikes the block F and forces it back until the pin N falls through the link, and the lip K of the block will then overlie the inner end of the coupled link to hold its outer end up ready for coupling with another car should the first-coupled car be uncoupled, and as will be understood from Fig. 3 of the drawings. The operation of the shaft R in uncoupling the car from the ground at either side of the car will be understood from the aforesaid description; and the cars may also be provided with a pull-rod, U, connected to the lever M or chain P and leading to the top of a box-car, where the rod U will be provided with a lever, V, which may be caught or locked under a detent, W, fixed to the car-body, thus allowing the cars to be coupled or uncoupled from their tops. The rod U and its lever V are indicated in dotted lines in Fig. 4 of the drawings.

It is obvious that cars provided with my improved couplings may be coupled or uncoupled without requiring train-men to stand between the cars and expose themselves to injury, and cars having this coupling may be coupled to cars provided with the ordinary link-and-pin draw-head.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the coupling mechanism, of the vertically-rocking crank-shaft for raising the coupler, an operating lever or arm pivoted to the end of said shaft to swing at right angles thereto, and a support on which the said arm or lever may be swung to hold the coupler raised, substantially as set forth.

2. The combination, in a car-coupling, with the vertically-swinging arm M, to which the coupling-pin is pivoted, of the crank-shaft R, having levers S S pivoted to its opposite ends at the sides of the car, the supports T T for said levers, and the chain P, connecting the crank-shaft and arm M, substantially as set forth.

FRANCIS L. McNAB.

Witnesses:
G. T. HALL,
J. W. HARTMAN.